FIG. 1
PRIOR ART

```
1    c:\collections
2        notes.txt
3        myletter.doc
4        c-myhomepage
5
6          s
7            homepage.html
8            myphoto.jpg
```

FIG. 2

```
1    c:\collections
2        notes.txt
3        myletter.doc
```

100

```
4        c-myhomepage
5          cspec
6          s
7            homepage.html
8            myphoto.jpg
```

FIG. 3

102

```
1    collection        c-myhomepage
2    coll-type         cf-web-page
3    coll-desc         A sample homepage collection
4    end-collection
```

FIG. 4

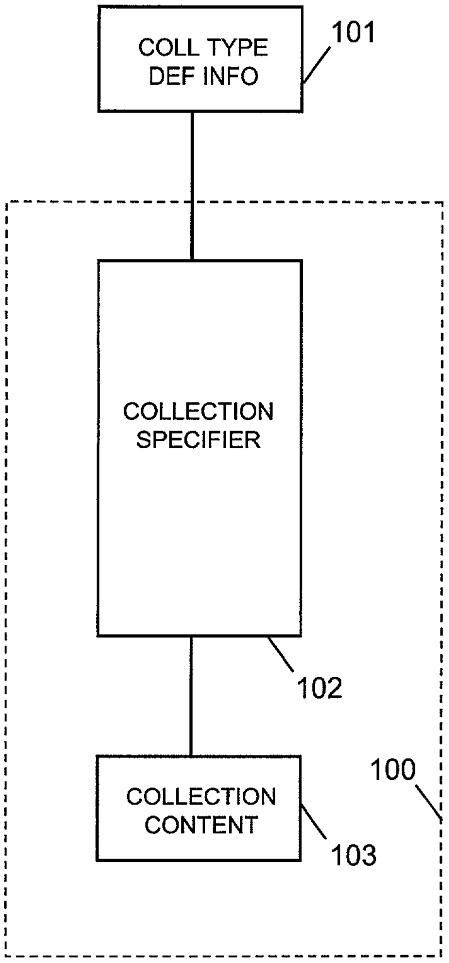
COLL TYPE DEF INFO
101
COLLECTION SPECIFIER
102
COLLECTION CONTENT
103
100

FIG. 5

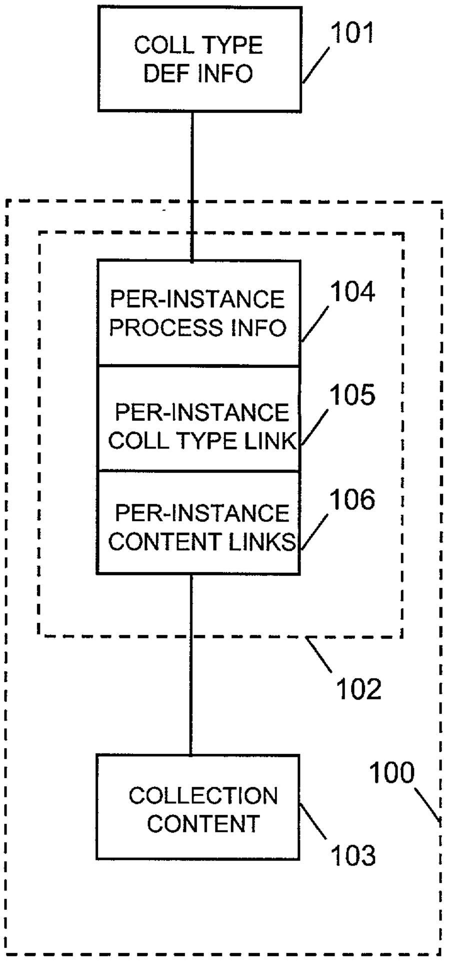
COLL TYPE DEF INFO
101
PER-INSTANCE PROCESS INFO
104
PER-INSTANCE COLL TYPE LINK
105
PER-INSTANCE CONTENT LINKS
106
102
COLLECTION CONTENT
103
100

FIG. 6

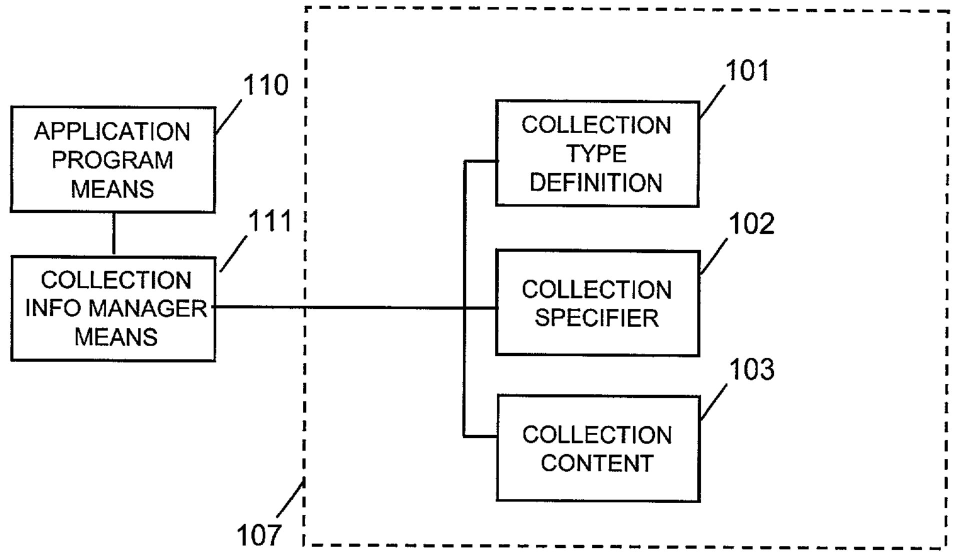
APPLICATION PROGRAM MEANS
110
COLLECTION INFO MANAGER MEANS
111
COLLECTION TYPE DEFINITION
101
COLLECTION SPECIFIER
102
COLLECTION CONTENT
103
107

FIG. 7

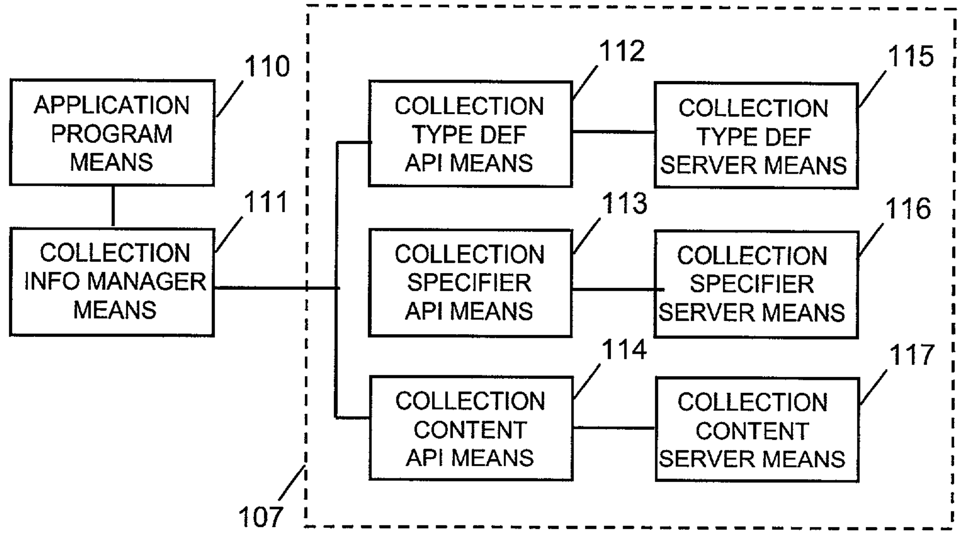
APPLICATION PROGRAM MEANS
110
COLLECTION INFO MANAGER MEANS
111
COLLECTION TYPE DEF API MEANS
112
COLLECTION TYPE DEF SERVER MEANS
115
COLLECTION SPECIFIER API MEANS
113
COLLECTION SPECIFIER SERVER MEANS
116
COLLECTION CONTENT API MEANS
114
COLLECTION CONTENT SERVER MEANS
117
107

FIG. 8

```
/* collection data structure */
collection-info {

  + specifier_info
      + coll-type-indicator
      + other specifier information ...

  + content_info
      + content_location_info ...
      + content_members ...
      + other content information...

  + other collection structure information...
}
```

FIG. 9

```
/* collection type definition data structure */
collection-type-definition-info {

  + coll-type-name
  + collection internal structure info ...
  + collection content location info ...
  + collection content type recognition info ...

  + other collection type definition information...
}
```

FIG. 10

```
KEY                    VALUE

/* collection type internal structure definitions */
dir_source_files      ./s
dir_doc_files         ./doc

/* content location definitions (per-type content links) */
content_subtree_http    http://host.com/some/dir/name
content_subtree_ftp     ftp://host.com/some/dir/name
content_subtree_nfs     /some/local/directory/name

/* content type recognition definitions */
content_policy        subtree_below_cspec_file
content_file_type     .c      file_cpp
content_file_type     .c      file_c
content_file_type     .h      file_c_include
content_file_type     .doc    file_ms_word
content_file_type     .html    file_html
content_file_type     .xls     file_ms_excel

/* collection processing definitions */
compile_c_files       yes
compiler_windows      vc++
compiler_unix         gcc
build platforms       Win98, Win2000, gnulinux
process files         compile link
link libraries        stdio math sock

/* results dispatching definitions */
results_ftp_host      ftp.output.com
results_ftp_dir       c:\ftphome\collection\results
```

FIG. 11

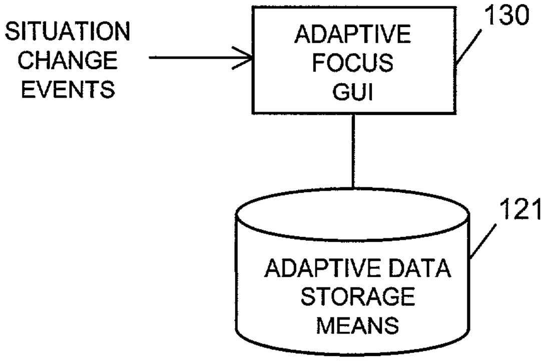

FIG. 12

```
/* simplified algorithm for an adaptive focus GUI */
Receive an incoming situation change event
Adapt to the new situation, using stores of adaptive knowledge
```

FIG. 13

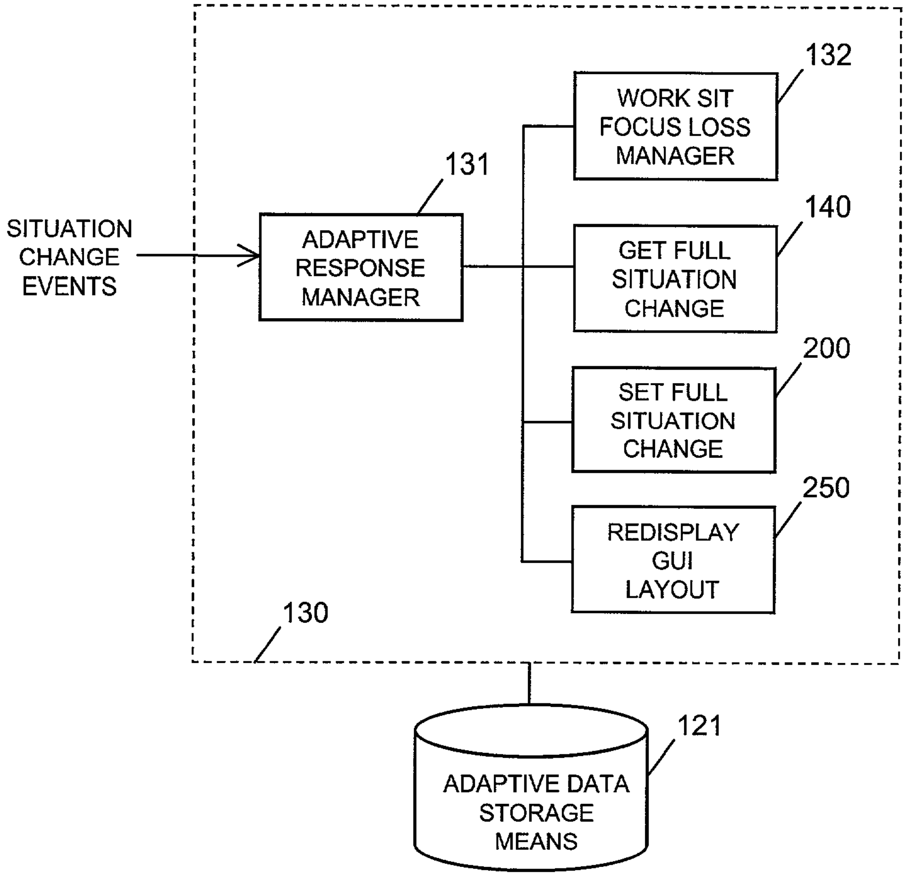
SITUATION CHANGE EVENTS
ADAPTIVE RESPONSE MANAGER
131
WORK SIT FOCUS LOSS MANAGER
132
GET FULL SITUATION CHANGE
140
SET FULL SITUATION CHANGE
200
REDISPLAY GUI LAYOUT
250
130
ADAPTIVE DATA STORAGE MEANS
121

FIG. 14

```
/* simplified algorithm for Adaptive Response Manager */
Receive situation change event
Perform loss of focus actions for current work situation
    - focus loss manager performs cleanup operations
    - focus loss manager performs logging and other operations
Derive a full situation change description from the change event
Install the new full situation change, thereby adapting the GUI
  to the incoming situation change event; do focus gain actions
Redisplay the newly adapted GUI layout
```

FIG. 15

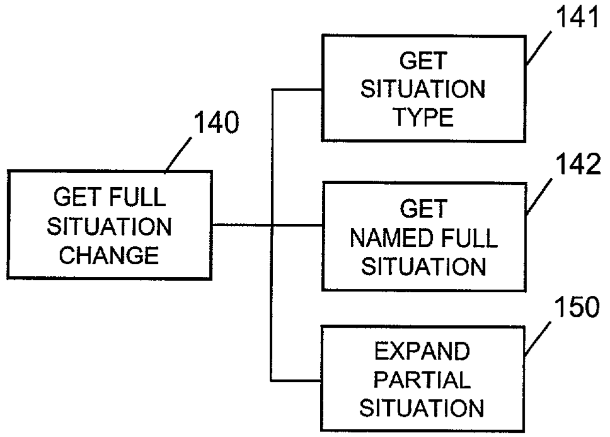

FIG. 16

```
/* simplified algorithm for  Get Full Situation Change */
Obtain change event type from incoming change ev
If sit change event type = full situation change
    Get full situation definition from situation name table
Else if sit change event type = partial situation change
    Expand partial situation into full situation according to
    current partial situation expansion policy.
Return a full work situation description to caller.
```

FIG. 17

```
name-full-sit.tbl:
# a table of situation names
# sit-name          definition file
doc-new-html         doc-new-html.def
sit-my-program       sit-my-program.def
sit-manager          sit-manager.def

full-situation-definition.def:
# a definition file for a particular situation
sit-desc      <a descriptive text string>
sit-type      <a situation type name from name-sit.tbl>
sit-ctx       <a context name from name-context.tbl>
sit-basedir   <a base directory in the filesystem>
sit-coll      <a collection name from the base directory>
sit-role      <a role name from name-role.tbl>
sit-timeset   <a timeset name from name-timeset.tbl>
sit-fvar      <a pair: fvar-name  fvar-value>
sit-fgroup    <a focus group name from name-fgroup.tbl>
```

FIG. 18

```
Example Situation Values
# typical values allowed in situation definition files

current      leave current value in place
none         replace current value with nothing
default      replace current value with the default value
<new>        replace current value with a new value
derived      replace current value with a value derived from
             some other previously determined situation value
```

FIG. 19

```
sit-my-program.def:
# sit definition for a programmer working on a favorite
# program and its 4 libraries in a favorite working directory
#
sit-desc      Work on my-program and its four libraries.
sit-type      st-default
sit-ctx       mine
sit-basedir   /home/user/sits/my-program
sit-coll      c-my-program
sit-role      developer-java
sit-timeset   st-default
sit-fvar      fgui-focus-coll-button-one      c-my-program
sit-fvar      fgui-focus-coll-button-two      c-lib-one
sit-fvar      fgui-focus-coll-button-three    c-lib-two
sit-fvar      fgui-focus-coll-button-four     c-lib-three
sit-fvar      fgui-focus-coll-button-five     c-lib-four
sit-fgroup    fg-dev-java
```

FIG. 20

```
doc-new-html.def:
# sit def for working on a new html document
#
sit-desc      Work on a doc in the html base directory
sit-type      st-doc-html
sit-ctx       mine
sit-basedir      /home/user/sits/html
sit-coll      none
sit-role      documenter
sit-timeset   default
sit-fgroup    fg-doc-html
```

FIG. 21

```
name-type-sit.tbl:
# table of situation type names
st-default          st-default.def
st-debug            st-debug.def

st-default.def:
sit-ctx             ctx-project-1
sit-basedir         c:\project-1
sit-coll            none
sit-role            role-proj1-developer
sit-timeset         ts-company
sit-fvar            proj-name  project-1
sit-fgroup          fg-proj-1

st-debug.def:
sit-ctx             ctx-debug
sit-role            role-developer-debug
sit-fgroup          fg-debug
```

FIG. 22

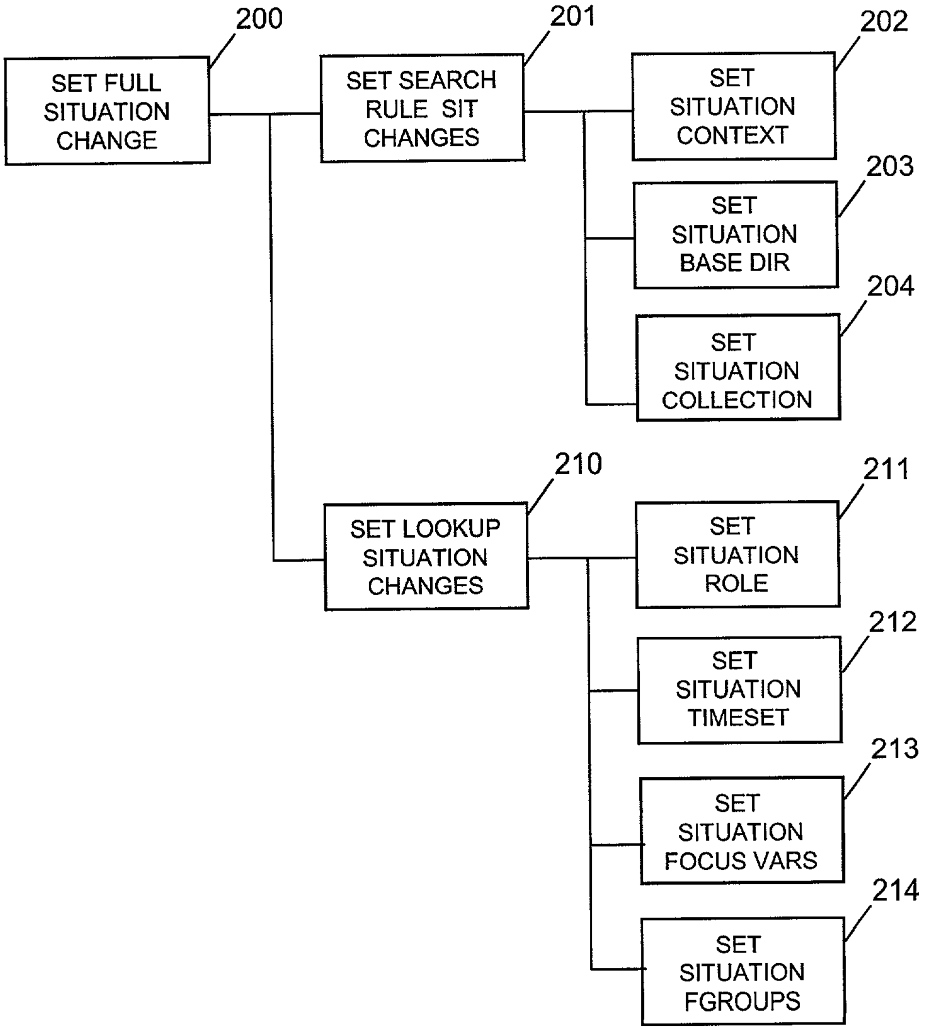
200
SET FULL SITUATION CHANGE
201
SET SEARCH RULE SIT CHANGES
202
SET SITUATION CONTEXT
203
SET SITUATION BASE DIR
204
SET SITUATION COLLECTION
210
SET LOOKUP SITUATION CHANGES
211
SET SITUATION ROLE
212
SET SITUATION TIMESET
213
SET SITUATION FOCUS VARS
214
SET SITUATION FGROUPS

FIG. 23

```
/* simplified algorithm for Set Full Situation Changes */
Set situation changes that help to define knowledge search rules
Set situation changes that use knowledge search rules
```

FIG. 24

```
/* simplified algorithm for Set Search Rule Situation Changes */
Set situation context
Set situation base directory
Set situation collection directory
```

FIG. 25

```
/* simplified algorithm for Set Lookup Situation Changes  */
Look up and set situation role values
Look up and set situation timeset values
Look up and set situation focus variables
Look up and set situation focus variable groups
```

FIG. 26

```
name-context.tbl:
# table of named contexts
# name              definition-file
default             default.def
debug               debug.def
```

FIG. 27

```
name-base-dir.tbl:
# table of named base directories
project-1           c:\projects\project-1
debug               c:\mystuff\debug-dir
```

FIG. 28

```
name-role.tbl:
# table of named roles
# name              definition-file
manager             role-manager.def
developer           role-developer.def

role-manager.def:
role-layout         layout-manager
role-fgroup         fg-default
role-fvar            role-name  default

role-developer.def:
role-layout         layout-developer
role-fgroup         fg-office-servers
role-fgroup         fg-office-repositories
role-fvar           role-name  developer
```

FIG. 29

```
name-timeset.tbl:
# name               definition-file
day-shift            day-shift.def
night-shift          night-shift.def
lunch-menu           lunch-menu.def


day-shift.def:
# time sensitive situation changes during the day shift
#
# hour 1 of 9am-5pm is spent in management role
time   0900
sit-ctx              default
sit-role             role-manager
end-time
#
# next 2 hours are spent doing development on project 1
time   1000
sit-ctx              default
sit-basedir          project-1
sit-role             developer
end-time
#
# rest of the shift is spent in sysadmin role
time   1200
sit-basedir          debug
sit-role             sysadmin
end-time
```

FIG. 30

```
# some example focus variables and their values
#
cfg-cust-ctx         default
cfg-cust-dir-cust    c:\codefast\version\site
cfg-cust-dir-inst    c:\codefast
cfg-cust-cfg-file    default/focusgui/pi/d-i/idx-svc-kj-web.tbl
cfg-cust-inst-type   cf-both
cfg-cust-platform    win2000.plt
cfg-cust-tree        NEW
fgui-context         default
fgui-base-dir        _HOME_\code
fgui-collection      testme
fgui-role            developer
fgui-timeset         default
prev-coll            c-myprogram
```

FIG. 31

```
name-fgroup.tbl:
# name          definition-file
#
# focus groups for roles
fg-role-default         fg-role-default.def
fg-role-developer       fg-role-developer.def
#
# focus groups for working from various locations
fg-office               fg-office.def
fg-home                 fg-home.def
#
# focus groups for projects
fg-project-1            fg-project-1.def
fg-project-2            fg-project-2.def


fg-office.def:
# set fvars to point at office servers
server-repository       rep.office.company.com
server-news             news.office.company.com
server-cks              cks.office.company.com

fg-project-1.def:
# set focus variables for project 1 things
project-1-dir           c:\some\directory
project-1-logfile       project-1.log
project-1-notes         project-1-notes.txt
project-1-maillist      project-1-staff.txt
```

FIG. 32

```
name-layout.tbl:
# sym-name              definition-file
layout-developer        layout-developer.def
layout-manager          layout-manager.def

layout-developer.def:
# GUI layout definitions for an office developer
#
layout-menubar          mbar-office-dev
layout-toolbar          tbar-office-dev-one
layout-toolbar          tbar-office-dev-two

layout-manager.def:
# GUI layout definitions for a manager
#
layout-menubar          mbar-office-manager
layout-toolbar          staff-list-buttons
layout-toolbar          task-assignment-buttons
layout-toolbar          project-ops-buttons
```

FIG. 33

```
/* a menu choice using a focus variable named “@{filename}*/

choice                c-rep-checkout-lock
choice-type           dialog
choice-cmd-iname      cb-fvar
choice-cmd-dname       prompt-for-filename
hoice-cmd-xtext       “checkout  @{filename}"
end-choice
```

FIG. 34

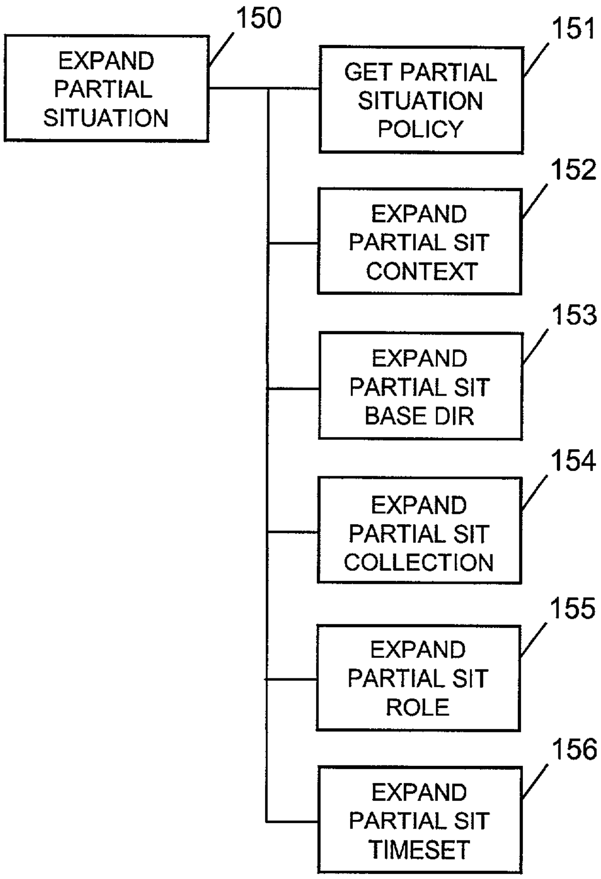
EXPAND PARTIAL SITUATION
150
GET PARTIAL SITUATION POLICY
151
EXPAND PARTIAL SIT CONTEXT
152
EXPAND PARTIAL SIT BASE DIR
153
EXPAND PARTIAL SIT COLLECTION
154
EXPAND PARTIAL SIT ROLE
155
EXPAND PARTIAL SIT TIMESET
156

FIG. 35

```
/* simplified algorithm for Expand Partial Situation */
Get current partial situation policy
Expand incoming partial situation according to type:
    For context, call expand partial situation context
    For base dir, call expand partial situation base directory
    For collection, call expand partial situation collection
    For role, call expand partial situation role
    For timeset, call expand partial situation timeset
Return expanded full situation to caller
```

FIG. 36

```
name-sitpol.tbl:
# a table of named situation policies (sitpols) for partial situations
sitpol-one          sitpol-one.def
sitpol-two          sitpol-two.def

sitpol-one.def:
# a definition file for a partial situation policy
sit-desc            <a descriptive text string>
sit-type            <a situation type name from name-type-sit.tbl>
#
partial-situation   context
sit-ctx             <a context name from name-context.tbl>
sit-basedir            <a base directory in the filesystem>
sit-coll            <a collection name from the base directory>
sit-role            <a role name from name-role.tbl>
sit-timeset         <a timeset name from name-timeset.tbl>
sit-fvar            <a pair: fvar-name  fvar-value>
sit-fgroup          <a focus group name from name-fgroup.tbl>
spec-value          <ctx name>  <full situation name>
end-partial-situation
#
partial-situation   basedir
...
partial-situation   collection
...
partial-situation   role
...
partial-situation   timeset
...
```

FIG. 37

```
sitpol-specific.def:
# partial situations that contain specific match values
#
sitpol              sitpol-one
sit-desc            <a descriptive text string>
sit-type            <a situation type name from name-type-sit.tbl>
#
partial-situation   context ...
end-partial-situation

partial-situation   basedir
...
#                   specific-role-name   full-situation-name
spec-value          c:\manager-info      sit-manager
spec-value          c:\html-files        doc-new-html
end-partial-situation

partial-situation   collection ...
end-partial-situation

partial-situation   role
...
spec-value          role-developer       sit-my-program
spec-value          role-manager         sit-manager
end-partial-situation

partial-situation   timeset ...
end-partial-situation

end-sitpol
```

FIG. 38

```
/* simplified algorithm for Expand Partial Sit Role */
/* Goal is to return a new role value, or a full situation */

/* handle incoming values that match specific role names */
look up incoming role value in spec-value entries
if a match is found among  the spec-value entries
    extract full situation name from spec-value entry
    set specific-match flag for caller
    return the full situation name and flag to caller

/* handle incoming values of 'none' */
else if incoming role change value is 'none',
    clear sit-role value and return

/* handle incoming values that are new */
else if incoming role change value is not 'default'
    look up value in name-role.tbl to ensure validity
    if incoming role name is invalid,
        set sit-role to default role value and return
    set sit-role to new value and return

/* set the default role value */
else
    set sit-role to default role value and return
```

FIG. 39

```
/* simplified algorithms for deriving partial situation values */
A. Timeset can be set from wall clock, or from default timeset.
B. Context values can be derived from a timeset def file.
C. Base directories can be derived from a timeset def file.
D. Collections can be derived from:
    - a timeset def file
    - a collection in current base directory, using first, last,
        most recently used, or other selection criteria
    - none
E. Role can be derived from a timeset def file, coll type def,
    or from default role
F. Fgroups can be derived from a timeset def file, coll type def,
    role def, or from a default list of fgroups
G. Fvars can be derived from a timeset def file, coll type def,
    role def, or from a default list of focus variables
```

FIG. 40

```
/* change event data structure */
event-info {

  + full-or-partial-situation-indicator
  + full-work-situation-name
  + partial-situation-change-event-type

  + new-full-situation-values
      + context
      + base-directory
      + collection
      + role
      + timeset
      + list of focus variables and values
      + list of focus variable groups and values

  + other optional event information
}
```

FIG. 41

102

```
collection          c-myhomepage
coll-type           cf-web-page
coll-desc           A sample homepage collection

sit-ctx             debug
sit-role            role-manager
sit-fvar            <fvar name>  <fvar value>

end-collection
```

FIG. 42

```
sit-my-program.def:
# sit definition for a programmer working on a favorite
# program and its 4 libraries in a favorite working directory
#
sit-desc      Work on my-program and its four libraries.
sit-type      st-default
sit-ctx       mine
... other situation specifier statements
sit-fgroup    fg-dev-java

sit-focus-gain   <a menu choice, external command, or other action>
sit-focus-gain   <another action to take on gain of focus>
sit-focus-gain   c-rep-checkout-lock  (see FIG 33)
...

sit-focus-loss   <a menu choice or action on loss of situation focus>
sit-focus-loss   <another menu choice to take on loss of sit focus>
```